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Abstract

PORTABLE ATOMIC POWER STATION

I.F.Bychkov, G.N.Ushakov, Yu.A.Sergeev
et al

The description is given of portable power station TES-3 (ТЭС-3) being now in operation in Obninsk. TES-3 main equipment fits on four wheeled truck-trailers. The station is designed according to two-circuit diagram with water-moderated heterogeneous II Mwt reactor cooled with water at 130 atm. In once-through steam generators there is produced an overheated steam at 20 atm and 285°C, its amount being enough for the power output ~ 2000 kWt on the turbine shaft. The amount of water 900 t/hour is necessary to cool the condenser. The core lifetime lasts about a year.

The equipment, reactor including, can be transported by means of wheeled truck- trailers to a new location of operation. For this purpose the reactor is provided with the shielding revealing the possibility to dismantle and transport it together with partial or total burn-up core in several hours after shut-down. When moved, the reactor is cooled down by means of the air radiator.

To provide the shielding from the irradiation, when the reactor is in operation, there is an additional shielding consisting of local materials (reinforced concrete, sand). The reactor is overloaded with the help of 25-tonn autocrane under field conditions, the reactor vessel top is not removed.

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